

BH/RKK
CMP/CMP
1399INVENTION ALERT FORMTO: Gaile Bailey
Extension:M/S 2061
32724ALERT NO: 0006228Current Date: 06/15/01

CIRCLE ONLY ONE FROM EACH TOP SECTION:

1) OWNER 2) DIVISION 3) PRODUCT BUSINESS GROUP(PBG)

PLEASE SUBMIT ONE ORIGINAL, SIGNED DOCUMENT FOR RECORDING. IF THIS IS A COPY OF A PREVIOUSLY SUBMITTED ALERT, PLEASE MARK IT ACCORDINGLY

OWNER		AMAT		AMT		AMK		AMSEA	AMJ	SMO
TFI	PDD	ETCH	ATD	IBSS	CORE	PRP	MD	AKT	PDC	
EPI	KPU1	METAL	ATD	IBSS	CORE TEC	PRP	PVD	ACVD	OPAL	SOFT-WARE
ORI	KPU3	SILICON	CORP		MICRO		ACM	APVD	ORBOT	AMIL
OXDL	KPU8	HDP			CORE ENG		WKPU	AETCH	NPD	
AIT	PSI	MXP&RFS			PROCOMP		INTE	AHRDWR	ITC	
CAP	CMP	COM ENG			CORE KNO					
	LOWK	HEXODE								
	HIGH K									

Please use separate attachments for any answers that don't fit on the form, especially for questions 3-8. If the answer to a question is "NONE", please write "NONE" rather than leaving the answer blank.

1. Title of Invention (please print clearly):

Additives for Electroplating Solution2. Inventors-Names only (please print clearly and provide complete information at Section 9.)Rajeev Bajaj

3. Earliest dates and model names of all Applied products incorporating the invention which have been offered for sale or are expected to be offered for sale:

N/A

4. If the invention has been demonstrated or described to persons other than Applied employees, for each disclosure please provide the earliest date, name of company, a brief description of what was disclosed and the purpose of the disclosure. Attach a copy of any related non-disclosure agreements:

None

5. If future disclosures like those in Question #4 are expected to occur within the next 12 months, please provide the anticipated date, type of information to be disclosed, and purpose of the disclosure: NONE [x]

6. Describe any other known designs or processes, whether actually implemented or merely proposed in a publication, which could be considered similar to your invention or which constitute the state-of-the-art improved upon by your invention: If described in a publication, attach a copy of same or provide a citation.

Unknown

7. List each feature of the invention which you consider novel and non-obvious. Describe the advantages of each novel feature in comparison with the state-of-the-art approaches which are most similar to your invention:

See descriptions below.

8. Describe the invention, preferably with reference to attached drawings:

- 1) Electroplating is has proven to be a viable technology for semiconductor gapfill applications. Electroplating solution typically consists of copper sulfate and sulfuric acid, besides additives such as chloride ions, and additives to aid filling of wiring structures. One of the significant issues with scale up of electroplating for High Volume Manufacturing is that Gapfill of wiring structures is sensitive to concentration of additives. The additives degrade due to exposure to air, flow, exposure to copper anode. One significant cause for degradation of additives is the plating current. Degradation is higher when higher current is used. This leads to a need for expensive metrology to continuously measure and correct electrolyte additive concentrations. We propose use of anti-oxidant molecules which can significantly reduce the degradation of additives. We believe the mode of degradation of organic additives under the influence of electric field is generation of free-radicals which cause breakage of chemical bonds. This mode can be significantly reduced by using "Anti-Oxidants". These molecules are radical traps which preferentially combine with free radicals this preventing decomposition of organic molecules. This can eliminate the need for continuous monitoring of electrolyte bath and in one preferred implementation, can make the single component bath a viable option – thus eliminating the need for all expensive and cumbersome bath management metrology.

ATTACH ADDITIONAL SHEETS TO DESCRIBE INVENTION AS NEEDED

9. Provide the following information for EACH inventor:

Inventor # 1:

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Work Phone 67513 Fax No.: 408-986-7513
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Citizenship India
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Manager: Gongda Yao Title: _____
Div. Manager _____ Title: GM
Product Group: ECP Dept #: 3064

Inventor # 2 :

Name: GIRISH DIXIT Employee # 75346 Mail Stop _____
Work Phone _____ Fax No: _____
Job Title: _____
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Home Address _____
Manager: Gongda Yao Title: _____
Div. Manager _____ Title: _____
Product Group: EMP ECP Dept #: 2729

Inventor # 3

Name: _____ Employee # _____ Mail Stop _____
Work Phone _____ Fax No: _____
Job title: _____
Citizenship: _____

Home address: _____	
Manager _____	Title: _____
Div. Manager _____	Title: _____
Product Group: _____	Dept #: _____

10. Signature, date and **PRINTED** name of each inventor plus two witnesses who have read and understood this Invention Alert form:

Inventors:

Rajeev Bajaj
Printed Name

Date

Rajeev Bajaj
Signature

Printed Name

Date

Signature

Printed Name

Date

Signature

Printed Name

Date

Signature

Printed Name

Date

Signature

Printed Name

Date

Signature

Witness:

M. ATIF MALIK 6/15/01
Printed Name Date
SRINIVAS GANDIKOTA 6/15/01
Printed Name Date

M. Atif Malik
Signature
[Signature]
Signature

Return to: Gaile Bailey
Mail Stop: 2061
Fax No.::: 986-3090
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General Instructions for completing Invention Alert Form

Please review the entire form prior to adding information.

Page 1

Shaded area identified Divisions-REQUIRED

Columns under each Division indicates Product Business Group-REQUIRED

1. Title of Invention - self explanatory and REQUIRED
2. Inventor Names-Please provide complete legal names - Required
3. This information is important for prioritizing Alert

Page 2

4-8 review and complete as specified

Page 3/4

Inventor Information: - Complete Legal Name of Inventors required. Please be as complete as possible as this is used to provide Inventor award information

Page 5

Signature Page - Required

Submit one alert form, complete with appropriate signatures to the party and mail stop listed. If submitting the alerts via electronic methods (fax or Lotus Notes), please follow with an original copy and identify same as the original of a previously submitted transmittal.